

REMARKS

Claims 1-16 are all the claims pending in the application.

Claims 1-16 are rejected under 35 U.S.C. § 101 because the claimed invention is drawn to non-statutory subject matter.

Claims 1-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Garg (U.S. Patent No. 6,601,080) in view of Hachiya (U.S. Patent No. 6,144,932).

The Specification, Drawings and Information Disclosure Statement have been objected to.

Applicant traverse the rejections and request reconsideration.

Preliminary Matters

The Applicants submit marked-up copies of Fig. 1, marked in red ink, showing proposed changes to overcome the objections to the drawings.

Section 101 Rejections

Claims 1-16 are rejected under 35 U.S.C. § 101 because the claimed invention is allegedly drawn to non-statutory subject matter.

The Examiner incorrectly notes that the claims do not recite a useful result. There is no requirement that the useful result be specifically **claimed**. The US patent laws require inventions to produce a useful result.

Under AT&T, although a mathematical algorithm may not be patentable in isolation, a process that applies an equation to a new and useful end is patentable subject matter under §101. *AT & T Corp. v. Excel Communications Inc.*, 50 USPQ2d 1447 (Fed Cir. 1999). The Applicants respectfully submit that the pending claims recite “new and useful” patentable subject matter

under §101, at least because, as noted in the present application at page 4, lines 7-13, the present invention provides a way of solving Gaussian elimination problems in a more efficient way.

This is believed to be a practical, useful result of the claimed invention. As is known to a skilled artisan, a substantial number of physical systems (for example, electronic circuits) can be represented by a set of simultaneous linear equations. Gaussian elimination is a standard way of solving such a set of simultaneous linear equations. Therefore, an invention that improves the efficiency of solving a set of simultaneous linear equations using Gaussian elimination provides a useful result of designing physical systems (for example, electronic circuits) in a more efficient way. Thus, Applicant respectfully submits that the pending claims recite patentable subject matter under 35 U.S.C. § 101.

In addition, the Applicants respectfully submit that the Examiner has provided insufficient grounds for rejecting the claims under 35 U.S.C. § 101. As noted in MPEP §2106,

"Office personnel have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. § 101. ... when such a rejection is made, Office personnel must expressly state how the language of the claims has been interpreted to support the rejection."

The Examiner simply states that the claims do not recite any clearly defined practical application of the claimed method. Further, the Examiner alleges that the final end result of the mathematical operation is not directed toward a practical application, and rejects the claims under 35 U.S.C. § 101 for allegedly merely solving a mathematical problem without limitation to a practical application. As noted above, AT&T merely requires the result to be new and useful,

which has been done in the claimed invention as discussed above. The Examiner also asserts that the claimed invention merely solves a mathematical problem without limitation to a practical application. As noted above, the practical application limitation, including, improved and more efficient solution of a Gaussian elimination problem, has been met.

Section 112 Rejections

The Examiner incorrectly contends that the Specification does not disclose the operation of the “determinator” and “replacer.” From the Specification, it is clear that computer systems that implement the disclosed techniques were contemplated by the inventors and hence form part of the invention. For example, p. 7 ll. 13-15 of the present Specification notes that “the above method is applied to an electronic simulation system that is actualized by a computer and its program.” Also, p. 7 ll.18-20 notes that “the system inputs circuit description...” In addition, it is accepted under US patent laws as interpreted by relevant dispositive case law that a general purpose computing machine running software is a statutory machine. (see for example *In re Warmerdam* 31 USPQ 2d 1754 (Fed. Cir. 1994)).

The functionality of determinator and replacer are described in the claims themselves. Specifically, claim 5 recites that the determinator determines a first combination of rows and columns and a second combination of rows and columns which are selected from among the rows and columns of the coefficient matrix. Likewise, a replacer performs replacement of elements between the first combination of row and column and the second combination of row and column. In addition, the description of S201, S202 and S203 provide support for these limitations by describing the functionality of the determinator and the replacer as being implemented by a computer using appropriate software. A skilled artisan will know that the

determinator and the replacer are implemented in software on a general purpose computing machine and the functionality of the determinator and the replacer will be clear from the claim language and the descriptions of steps S201, S202 and S203.

For a better understanding, Fig. 1 has been amended to indicate that the steps S201 and S202 are performed by the determinator and S203 is performed by the replacer.

Prior Art Rejections

Rejection of Claims 1-16 under section 103 based on Garg and Hachiya

Claims 1-16 have been rejected based on the combined teachings of Garg and Hachiya (US 6,133,932). The '932 patent, which is also assigned to NEC Corporation, lists Kautaro Hachiya as a sole inventor. The Applicants respectfully submit that the sole inventor of the present Application is Kautaro Hachiya who is also the sole inventor of the '932 patent.

Therefore, the subject matter of the '932 patent does not qualify as an invention by "another."

In addition, the '932 patent was issued on November 7, 2000 which is later than one year prior to the filing date of the present Application, which is April 2, 2001. Under these facts, the '932 patent does not qualify as a prior art under any section of section 102. Therefore, the Examiner is kindly requested to withdraw the pending rejection based on Garg and Hachiya.

Conclusion


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
U.S. Application No. 09/822,512

Attorney Docket No. Q63926

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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CUSTOMER NUMBER

Date: January 31, 2005

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U.S. Application No. 09/822,512

Attorney Docket No. Q63926

AMENDMENTS TO THE DRAWINGS

Attached is a marked up copy of Fig. 1, marked in red ink showing proposed changes.

Attachment: Annotated Sheet



FIG. 1

